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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/845,592	04/30/2001	Kevin Curtis Griffin	ROC920010001US1	3239
7590 09/08/2004				
Scott A. Stinebruner Wood, Herron & Evans, L.L.P. 2700 Carew Tower 441 Vine Street Cincinnati, OH 45202-2917		EXAMINER FLEMING, FRITZ M		
		ART UNIT PAPER NUMBER		
		2182		
DATE MAILED: 09/08/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/845,592	GRIFFIN ET AL.	
	Examiner	Art Unit	
	Fritz M Fleming	2182	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.


- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed. \
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.


FRITZ FLEMING
PRIMARY EXAMINER
GROUP 2100

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>08/25/2003</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matena as supplied by applicants per EP 0 772 126 A2 in view of Slaughter et al. (Slaughter).

Per claim 1, Matena discloses the following. A resource action is deemed to be any access of the shared disk resource 120 by any of the nodes A-D. Each of the plurality of nodes A-D has cluster object in the form of the DMx, each of which are capable of

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owning the shared disk resource. The method is described at columns 5+ and Figure 5. The terminology "acquiring a lock" on each active node is not used per se, but the "lock" is tantamount to precluding any changes from occurring during the resource action. The reference does disclose that each node has a DLM-an optional distributed lock manager-and that such is conventional, but no details regarding the specifics are given. Per the discussion, a failed node (i.e. D) is eliminated from the membership list in that the epoch number of the remaining active nodes A-C is updated to 101. Node D retains the old epoch number 100, and is thus blocked from membership in the new configuration. Thus the epoch number is seen to be the claimed "node configuration parameter" that is modified at the active nodes A-C and not modified at D, thus blocking D from the membership. Furthermore, each node then has an object configuration parameter NK, as the failed node is not allowed to update its NK, and as such would be a mismatch to the new NK and CK, the I/O operation from the failed node would be excluded. Thus the resource action is thus completed, that being a new membership of Nodes A-C being formed to allow access to the shared disk. A lock at the end is not disclosed.

In the same art of endeavor, Slaughter shows the use of a lock at 404 and an unlock 418 during a cluster reconfiguration during, when for example, a node leaves. The lock simply prevents other transactions from being processed during the reconfiguration, and the lock release allows for the nodes to be able to service incoming transactions.

Therefore, it would have been obvious to modify Matena, and the DLM of each node, to perform a lock at the beginning of the reconfiguration and an unlock at the end so that

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other transactions are prevented from being processed. The combination is suggested by Matena as Matena shows the use of DLM in a conventional manner and Slaughter teaches exactly what such a conventional usage is.

Per claim 2, only active nodes are allowed, and hence it is determined that each DM is active to allow for the desired I/O operations. Per claim 3, the combination ensures that only active nodes are allowed to reconfigure by the resource action by locking out the failed node D. Per claim 4, a plurality of nodes is shown at A-D. Per claim 5, such is seen as the epoch number. Per claims 6 and 7, such is seen as the Nk and CK. Per claims 8 and 9, Matena discloses membership determined in a conventional manner and Slaughter teaches that a resource recovery can take place in the form of a node to join an existing cluster. Per claim 10, the cluster object number is updated via the Nk and CK to signify the new ownership of the shared resource. Per claim 11, two shared disks are shown at Figure 4 of Matena, and as a result of the reconfiguration, all resources will be owned, and to arbitrarily assign them to a node is obvious subject matter as the resources to be owned are the ultimate I/O operations. Claims 12 and 13 locks are addressed above. The claim 14 value pair is seen as the Ck and Nk. The claim 15 cluster protocol is rendered obvious by the flowcharting. The claim 16 is rendered obvious in that it is known that the previous clusters included D, and the new membership excludes D; therefore, the missing cluster entities are detected. Per claim 17, such is rendered obvious as the overall apparatus is run on a computer, hence the obvious presence of a memory and a program. Claims 18-25 are tantamount to claims 4-16 above, noting that epoch numbers have been incremented from 100 to 101.


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Overall, a clustered computer system is taught by the combined references, as is the program product, required to run on the computer system and the presence of a signal bearing medium to do so, either in the form of recorded or transmitted mediums.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fritz M Fleming whose telephone number is 703-308-1483. The examiner can normally be reached on M-F, 0600-1500.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on 703-308-3301. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Fritz M. Fleming
Primary Examiner
Art Unit 2182

fmf